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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,320	09/26/2003	Yohichiroh Watanabe	242938US0	5358
22850	7590	11/09/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			DOTE, JANIS L	
			ART UNIT	PAPER NUMBER
			1756	

DATE MAILED: 11/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/670,320

Applicant(s)

WATANABE ET AL.

Examiner

Janis L. Dote

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,3 and 7-28 is/are pending in the application.
- 4a) Of the above claim(s) 26 and 28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,8-11,13,14,17,18,21-25 and 27 is/are rejected.
- 7) ☒ Claim(s) 7,12,15,16,19 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/26/03; 8/17/04; 9/9/04; 9/23/04; 5/31/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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1. The examiner acknowledges the amendments to claims 1, 3, 7, 10, 11, 15, 16, 24, 26, and 27, and the cancellation of claims 2 and 4-6 set forth in the amendment filed on Aug. 31, 2005. Claims 1, 3, and 7-28 are pending.

Claims 26 and 28 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicants timely traversed the restriction (election) requirement in the reply filed on Apr. 4, 2005.

2. The references US 6,503,676 and US 6,593,048 listed on the initialed form PTO-1449 filed on Sep. 26, 2003, mailed on Apr. 29, 2005, were inadvertently not initialed by the examiner. The form PTO-1449 mailed on Apr. 29, 2005, was corrected on Nov. 1, 2005, and is attached to this office action.

3. The examiner has considered only the US application listed on "List of related cases" in the Information Disclosure statement filed on Jun. 29, 2005.

The examiner has crossed out the US applications listed on "List of related cases" in the Information Disclosure statements filed on Aug. 17, 2004, Sep. 9, 2004, and Sep. 23, 2004, because the examiner has considered the US published applications of

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said US applications listed on the form PTO 1449 filed on May 31, 2005.

The US applications listed in the "List of related cases" in the Information disclosure statement (IDS) filed on Sep. 26, 2003, have been crossed out by the examiner. Applicants did not provide legible copies of those portions of the copending U.S. patent applications, i.e., copies of the originally filed claims and figures of the US applications, which caused them to be listed, as requested in the office action mailed on Apr. 29, 2005. In that office action, applicants were given ONE MONTH to supply the mentioned omissions.

Applicants are advised that the date of any re-submission of any item of information contained in an information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

4. The objection to the specification set forth in the office action mailed on Apr. 29, 2005, paragraph 5, has been withdrawn in response to the amended paragraphs at page 70, 105, 115, 116,

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and 147, of the specification, set forth in the amendment filed on Aug. 31, 2005.

The objections to the specification set forth in the office action mailed on Apr. 29, 2005, paragraph 6, items (1)-(3) and (5), have been withdrawn in response to the amended paragraphs beginning at page 30, line 18, page 28, line 10, and page 48, line 15, of the specification, and the amendment to claim 27 set forth in the amendment filed on Aug. 31, 2005.

The rejections of claims 1-23, 25, and 27 under 35 U.S.C. 112, second paragraph, set forth in the office action mailed on Apr. 29, 2005, paragraph 8, have been withdrawn in response to the amendments to claim 1, 16, and 27 set forth in the amendment filed on Aug. 31, 2005.

The rejections of claims 1-3, 6, 8-12, 15-25, and 27 under 35 U.S.C. 102(a)/103(a) and under 35 U.S.C. 102(e)/103(a) over US 2003/0138717 A1 (Yagi), as evidenced by applicants' admission I, and of claim 7 under 35 U.S.C. 103(a) over Yagi, as evidenced by applicants' admission I, set forth in the office action mailed on Apr. 29, 2005, paragraphs 14 and 15, respectively, have been withdrawn in response to the amendments to claims 1 and 24 set forth in the amendment filed on Aug. 31, 2005. Those amendments added the limitation of now-cancelled claim 4 that the particulate resin in the particulate material

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is "crosslinked." Yagi does not teach or suggest that the particulate material in its toner comprises a crosslinked resin as recited in instant claims 1 and 24.

The rejections of claims 1, 6, 8, 9, 12, 15-25, and 27 under 35 U.S.C. 102(a)/103(a) and under 35 U.S.C. 102(e)/103(a) over US 2003/0180644 A1 (Nanya), as evidenced by applicants' admission 1, set forth in the office action mailed on Apr. 29, 2005, paragraph 17, have been withdrawn in response to the amendments to claims 1 and 24 set forth in the amendment filed on Aug. 31, 2005. Those amendments added the limitation of now-cancelled claims 2 and 4 that the particulate resin in the particulate material is "crosslinked" and has a Tg of 40 to 100°C. Nanya does not teach or suggest that the particulate material in its toner comprises a crosslinked resin as recited in instant claims 1 and 24, or has a Tg as recited in the instant claims.

The rejection of claims 1, 5, 8, 22-25, and 27 under 35 U.S.C. 103(a) over US 6,416,917 B1 (Nakanishi) combined with US 5,066,558 (Hitake), as evidenced by US 6,106,986 (Shirai), set forth in the office action mailed on Apr. 29, 2005, paragraph 18, has been withdrawn in response to the amendments to claims 1 and 24 set forth in the amendment filed on Aug. 31, 2005. Those amendments added the limitation of now-cancelled

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claims 2 and 4 that the particulate material comprises a crosslinked resin having a Tg of 40 to 100°C. Neither Nakanishi nor Hitake teaches or suggests such a particulate material as recited in instant claims 1 and 24.

The rejection of claims 1-4, 8, 10, 22-25, and 27 under 35 U.S.C. 103(a) over Nakanishi combined with US 4,980,257 (Anno), set forth in the office action mailed on Apr. 29, 2005, paragraph 19, has been withdrawn in response to the amendments to claims 1 and 24 set forth in the amendment filed on Aug. 31, 2005. Those amendments added the limitation of now-cancelled claim 6 that the toner binder resin comprises tetrahydrofuran (THF) insoluble components in an amount of from 2 to 30 % by weight. Nakanishi does not disclose that its toner binder resin comprises THF insoluble components as recited in instant claims 1 and 24.

5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

In claim 25, the recitation "[a] toner container containing the toner composition" lacks antecedent basis in the specification.

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Applicants' amendment filed on Aug. 31, 2005, did not address this objection.

6. The indicated allowability of claims 13 and 14 is withdrawn in view of the newly discovered reference(s) to US 2003/0152859 A1 (Emoto'859). Rejections based on the newly cited reference(s) follow.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 21 is indefinite in the phrase "the binder resin comprises tetrahydrofuran-insoluble components in an amount of from 1 to 15% by weight based on the total weight of the binder resin." The amount of 1 to 15% by weight is outside the amount range of 2 to 30% by weight recited in instant claim 1 from which claim 21 depends.



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9. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10. US 2003/0152859 A1 (Emoto'859) was published on Aug. 14, 2003, and has an effective filing date of Nov. 4, 2002, which are both prior to the filing date of Sep. 26, 2003, of the instant application. The inventive entity of Emoto'859 differs from that of the instant application. Thus, Emoto'859 qualifies as prior art under 35 U.S.C. 102(a) and under 35 U.S.C. 102(e). Accordingly, Emoto'859 qualifies also as prior art under 35 U.S.C. 103(a) and 103(c).

11. Claims 1, 3, 8-11, 13, 14, 17, 18, 21-25, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Emoto'859, as evidenced by applicants' admissions at page 41, line 10, to page 42, line 8, of the instant specification (applicants' admission 1), combined with US 4,980,257 (Anno).

Emoto'859 discloses a developer comprising a magnetic carrier coated with a silicone resin layer and a toner that comprises toner particles. The toner particles comprise a binder resin, carnauba wax as the releasing agent, and a colorant. The binder resin comprises a modified polyester resin

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and an unmodified polyester that are present in a weight ratio (modified to unmodified) of about 0.31, which is within the ratio range of 5/95 to 80/20 recited in instant claim 8. See example 4 at page 12, and paragraph 0214. The amounts of the modified and unmodified resins were determined from the information provided in example 4. The magnetic carrier meets the carrier limitation recited in instant claim 27. The toner particles further comprise a charge control agent fixed on the surface of the toner particles in an amount of 0.25 parts by weight per 100 parts by weight of toner particles, and externally added hydrophobic silica and titanium oxide.

Paragraphs 0129-0130 and paragraph 0147, lines 17-18. The binder resin comprises 6 wt% of tetrahydrofuran insoluble components, which is within the amount ranges recited in instant claims 1, 21, and 24. The binder resin has a peak molecular weight  $M_p$  of 6,500, a number-average molecular weight  $M_n$  of 3,500, and a  $T_g$  of 49°C. See Table 1, example 4. The binder resin  $T_g$  meets the  $T_g$  range recited in instant claims 1 and 24. The toner has a spindle form and a volume average particle size ( $D_v$ ) of 6.2  $\mu m$ , and a ratio of the volume average particle size ( $D_v$ ) to the number average particle size of 1.10.

Paragraph 0147, lines 12-13, and Table 2, example 4. The volume average particle size  $D_v$  and ratio  $D_v/D_n$  meet the particle size

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limitation and ratio  $D_v/D_n$  limitation recited in instant claims 17 and 18, respectively. The spindle form meets the form limitation recited in instant claim 13. Emoto'859 further teaches a container comprising said toner. Paragraph 0117, image developer 4 in Fig. 1.

According to Emoto'859 its toner provides high quality images having good reproducibility of a micro dot image. The toner has highly reliable cleanability, good low-temperature fixability, and good transferability. Paragraphs 0011-0012.

Emoto'859 does not disclose that the toner satisfies the dimensional relationships recited in instant claim 14. However, as discussed above, the toner disclosed by Emoto'859 has a spindle form that meets the shape limitation recited in instant claim 13. Furthermore, the instant specification at page 41, lines 10-25, discloses that when the ratio  $r_2/r_1$  is too small, the dot reproducibility and transfer efficiency deteriorate; if the ratio  $r_2/r_1$  is too large, the toner has a "form near the spherical form and therefore the cleaning problem tends to occur." The instant specification at page 41, line 26, to page 42, line 8, also discloses that if the ratio  $r_3/r_2$  is too small, the toner has "a form near a flat form, and thereby the toner has low transferability," and when the ratio  $r_3/r_2$  is 1.0, the "toner can be rotated while the major axis is the rotation

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axis." The Emoto'859 toner in example 4 exhibits good cleanability, dot reproducibility, transferability, and image qualities. See Emoto'859, Table 3 at page 15, example 4. The Emoto'859 toner exhibits the properties sought by applicants. Accordingly, because the Emoto'859 toner has a spindle form and appears to exhibit the properties sought by applicants, it is reasonable to presume that the Emoto'859 toner satisfies the dimensional relationships recited in instant claim 14. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Emoto'859 does not disclose that the unmodified polyester resin has a weight-average molecular weight as recited in instant claims 1 and 24. However, Emoto'859 teaches that the unmodified polyester resin preferably has a weight average molecular weight of 10,000 to 300,000, which overlaps the range of 2,000 to 10,000 recited in instant claims 1 and 24.

Paragraph 0072, line 10, and paragraph 0074, lines 3-5.

Emoto'859 also teaches that the unmodified polyester resin has an acid value of 1 to 30 mg KOH/g, which meets the acid value range of 0.5 to 40 mg KOH/g recited in instant claim 9.

Paragraph 0075, lines 2-3.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Emoto'859, to use

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a unmodified polyester resin having a weight-average molecular weight and an acid value as recited in the instant claims as the unmodified polyester in the toner in example 4 of Emoto'859.

That person would have had a reasonable expectation of successfully obtaining a spindle shaped toner having the benefits disclosed by Emoto'859.

Emoto'859 does not disclose that the surface of the toner particles in example 4 comprises a particulate material where the particulate material is embedded on the surface of the toner particles as recited in instant claims 1 and 24.

Anno teaches thermally fixing minute cross-linked vinyl resin particles **a** having Tg of 83°C and minute vinyl resin particles **b** having a Tg of 81°C to the surface of toner particles using a heat-treating and impact type modifying machine, Nara Hybridization System. Both minute resin particles **a** and **b** have an average particle size of 1 micron. Col. 16, lines 40-45; col. 20, lines 51-55; col. 21, lines 24-58; and col. 23, lines 43-55. The Tg's are within the Tg ranges recited in instant claims 1, 3, and 24. The minute resin particles **a** and **b** meet the compositional limitations recited in instant claim 10. The minute resin particles **a** also meet the crosslinked limitation recited in instant claims 1 and 24. The average particle size of 1 micron is about 0.16 times the

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average particle size of the Emoto'859 toner particles in example 4 ( $6.2 \mu\text{m} = 6200 \text{ nm}$ ), which meets the particle size limitation recited in instant claims 1 and 24. Anno further teaches that it is desirable that the minute resin particles of the first thermoplastic resin have an average particle size of 0.05 to 3 microns, i.e., 50 nm to 3000 nm, that the minute resin particles of the second thermoplastic resin have an average particle size of 0.4 to 3 microns, i.e., 400 to 3,000 nm, and that both are no less than 1/100 and no more than 1/5 of the average particle size of the toner particles. Col. 11, lines 17-23. The average particle size ranges of the minute resin particles overlap the particle range of 50 to 500 nm recited in instant claim 11. According to Anno, toner particles comprising the minute resin particle **a** and **b** have stable charging properties, high flowability, and high cleaning property. Col. 3, lines 54-58, and Tables 3 and 4 at cols. 27-30, example 1 and comparative example 10, which does, not comprise any minute resin particles.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Anno, to add the Anno minute resin particles **a** and **b** to surface of the toner particles rendered obvious over the teachings of Emoto'859 in the manner taught by Anno. That person would have had a

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reasonable expectation of successfully obtaining a toner that has high flowability, stable charging property, and high cleaning property, as disclosed by Anno.

Instant claim 1 is written in product-by-process format. The Emoto'859 toner in example 4 is not obtained by the process steps recited in instant claim 1. However, as discussed above, the combined teachings of Emoto'859 and Anno render obvious a toner that meets the compositional limitations recited in instant claim 1, and that would appear to have very similar properties in use. Accordingly, the toner rendered obvious over the combined teachings of Emoto'859 and Anno appears to be the same or substantially the same as the toner obtained by process steps recited in instant claim 1. The burden is on applicants to prove otherwise. In re Marosi, 218 USPQ 289 (Fed. Cir. 1983); In re Thorpe, 227 USPQ 964 (Fed. Cir. 1985); MPEP 2113.

12. Claims 7, 12, 15, 16, 19, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Neither Emoto'859 nor Anno teaches or suggests a particulate material having the molecular weight limitations

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recited in instant claim 7 and the composition limitations recited in instant claim 15. Emoto'859 does not disclose or suggest that its toner has an average sphericity as recited in instant claim 12 or the flow starting point recited in instant claim 16. Nor does Emoto'859 teach or suggest that its binder resin has the molecular weight distributions recited in instant claims 19 and 20.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The central fax phone number is (571) 273-8300.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLD  
Nov. 4, 2005

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